

IN THE CLAIMS:

1. (Previously presented) A fracture fixation implant comprising:
a first portion adapted to be implanted within a bone across a fracture site in said bone,
a second portion integrally formed with said first portion by a bend to extend backwardly in opposite direction from said first portion across the fracture site outside the bone to pass on a superficial surface of the bone, such that said first and second portions are juxtaposed with one another in offset planes with the first portion extending longitudinally in the bone, the second portion extending longitudinally on the outside of the bone, and
a fixation element adapted to be secured to said bone for cooperating with said second portion to maintain a tension force developed in the first and second portions for producing compression of the bone across the fracture site.

2. (Previously presented) A fracture fixation implant as claimed in claim 1, comprising a tensioning device engageable with said second portion to develop said tension force and produce the compression of the bone across said fracture site.

3. (Previously presented) A fracture fixation implant as claimed in claim 1, wherein said first portion comprises two spaced wires adapted for longitudinal insertion into said bone, said wires being of a length for extending out of said bone and being integrally formed with said second portion which extends backwardly into juxtaposition with the wires of said first portion.

4. (Original) A fracture fixation implant as claimed in claim 3, wherein said second portion comprises wires continuously formed with the wires of said first portion.

5. (Original) A fracture fixation implant as claimed in claim 4, wherein the wires of said second portion cross one another at a position adapted to be on said superficial back surface of the bone.

6. (Original) A fracture fixation implant as claimed in claim 4, wherein said wires of said second portion include legs spaced from one another and adapted to pass on said superficial surface of the bone.

7. (Original) A fracture fixation implant as claimed in claim 4, wherein the wires of said first and second portions have different diameters.

8. (Currently Amended) A fracture fixation implant as claimed in claim 7, comprising a smooth transition portion between the different diameters of the wires of said first and second portions.

9. (Previously presented) A fracture fixation implant as claimed in claim 4, wherein said wires of said second portion are joined together by a U-shaped bend portion at a location distant from where the wires of the first portion exit from the bone, said U-shaped bend portion lying outside of the plane of the respective said bends joining the wires of the first and second portions.

10. (Previously presented) A fracture fixation implant as claimed in claim 9, wherein said U-shaped bend portion and said wires of the second portion are non-planar.

11. (Previously presented) A fracture fixation implant as claimed in claim 9, comprising a tensioning device engageable with said U-shaped bend portion of said second portion to develop said tension force acting across said fracture site.

12. (Previously presented) A fracture fixation implant as claimed in claim 9, wherein said fixation element comprises a bone screw, and a washer secured by said bone screw to said second portion in a position in proximity to said U-shaped bend portion.

13. (Previously presented) A fracture fixation implant as claimed in claim 12, wherein said tensioning device is fitted between said washer and said U-shaped bend portion to apply force thereto which urges the U-shaped bend portion away from the first portion to produce said tension force in the wires.

14. (Currently Amended) A fracture fixation implant as claimed in claim 3, wherein said wires of said first and second portions are continuous, the wires of said first portion extending in longitudinally spaced relation and joined to the wires of said second portion with a respective said bend so that the wires of the second portion extend backwardly in the juxtaposed relation with the wires of said first portion.

15. (Original) A fracture fixation implant as claimed in claim 5, wherein the wires of said second portion cross one another at a location adapted to be placed over the fracture site.

16. (Original) A fracture fixation implant as claimed in claim 12, wherein said tensioning device is fitted in alignment with said bone screw.

17. (Previously presented) A fracture fixation implant as claimed in claim 6, wherein said wires of said first portion extend beyond the wires of said second portion.

Claim 18 - Cancelled.

19. (Previously presented) A fracture fixation implant as claimed in claim 2, wherein said tensioning device comprises a counter-bearing jaw adapted to be secured with respect to the bone and a slidable actuator jaw engageable with said second portion and movable away from said counter-bearing jaw to produce tension in said first and second portions.

20. (Original) A fracture fixation implant as claimed in claim 19, wherein said tensioning device further comprises a pair of gripper arms hingeably connected together and respectively connected to said counter-bearing jaw and said actuator jaw.

Claims 21 - 36 - Cancelled.

37. (Previously presented) An implant for fixation of a bone fracture and for applying compression across the fracture, said implant comprising:

a wire element having a first leg adapted to be implanted longitudinally in the bone and having a length to extend across the fracture and exit from the bone and a second leg joined to the first leg by a bend having a size and shape so that the second leg extends backwardly in longitudinal juxtaposition with the first leg at a vertical spacing distance therefrom to overly a superficial surface of the bone such that a longitudinal pulling force applied to the second leg will produce tension in the wire element and apply compression across the fracture, and

means associated with said second leg for securing the second leg to the bone to maintain the tension developed in the wire element.

38. (Previously presented) An implant as claimed in claim 37, wherein said wire element has a pair of said first legs and a pair of said second legs, each pair of first and second legs being joined by a respective said bend, said pair of second legs being connected together by a further bend which lies predominantly in a plane with the second legs.

39. (Previously presented) An implant as claimed in claim 37, wherein said first and second legs have different cross-sectional areas.

40. (Previously presented) An implant as claimed in claim 38, wherein said means to maintain the tension in the wire element comprises a washer engageable with said pair of second legs and a bone screw for securing the washer with respect to the bone.

41. (Previously presented) An implant as claimed in claim 37, wherein said pair of second legs cross one another.

42. (Previously presented) An implant as claimed in claim 37, wherein said pair of second legs are spaced from one another.

43. (Previously presented) An implant as claimed in claim 37, further comprising a tensioning device engageable with said second leg to develop said tension in the wire element.

44. (Previously presented). An implant as claimed in claim 43, wherein said tensioning device comprises a counter-bearing jaw adapted to be secured with respect to the bone and a slidable actuator jaw engageable with said second leg and movable with respect to said counter-bearing jaw to develop said tension force in said wire element.

45. (Previously presented) An implant as claimed in claim 44, wherein said tensioning device further comprises a pair of gripper arms hingeably connected together and respectively connected to said counter-bearing jaw and said actuator jaw.

46. (Previously presented) An implant as claimed in claim 37, wherein the means to maintain the tension in the wire element comprises a hook on said second leg adapted for being impacted into the bone.

47. (Previously presented) An implant as claimed in claim 46, wherein said hook is formed by a bend at an end of said second leg.

48. (Previously presented) An implant as claimed in claim 37, wherein said wire element is continuous and includes said first and second legs.

49. (Previously presented) An implant as claimed in claim 38, wherein said first pair of legs are slightly curved outwardly away from one another.

50. (Previously presented) An implant as claimed in claim 38, wherein said pair of first legs extends beyond said further bend.

51. (Previously presented) An implant as claimed in claim 37, wherein said first leg is longer than said second leg.

52. (Previously presented) A method for fixation of a bone fracture and for applying compression across the fracture, said method comprising the steps of:

providing a wire element having a first leg extending longitudinally and a second leg joined to the first leg by a bend so that the second leg extends backwardly in longitudinal juxtaposition with the first leg in vertically spaced relation,

implanting the first leg longitudinally in a fractured bone such that the first leg extends across the fracture and said bend extends outwards of the bone and the second leg extends over a superficial surface of the bone,

applying a pulling force on the second leg to develop tension in the wire element and produce compression across the fracture, and

securing the second leg to the bone while the wire element is in tension.

53. (Previously presented) A method as claimed in claim 52, comprising forming the wire element with a pair of said first legs and a pair of said second legs which are joined to one another by respective said bends, said pair of second legs being connected by a further bend extending in a plane substantially perpendicular to the bends connecting the first and second pair of legs.

54. (Previously presented) A method as claimed in claim 53 wherein said pulling force is applied to said further bend.

55. (Previously presented) A method as claimed in claim 52 wherein the wire element is secured to the bone while in tension by engaging a washer with the pair of second legs and securing the washer to the bone.

56. (Previously presented) A fracture fixation implant as claimed in claim 1, wherein the wires of said first and second portions have different diameters.

57. (Previously presented) A method of using the implant of claim 37 for fixation of a bone fracture and for applying compression across the fracture, said method comprising the steps of:

implanting the first leg longitudinally in a fractured bone such that the first leg extends across the fracture and said bend extends outwards of the bone and the second leg extends over a superficial surface of the bone,

applying a pulling force on the second leg to develop tension in the wire element and produce compression across the fracture, and

securing the second leg to the bone while the wire element is in tension.

58. (Previously presented) A method as claimed in claim 57, comprising forming the wire element with a pair of said first legs and a pair of said second legs which are joined to one another by respective said bends, said pair of second legs being connected by a further bend extending in a plane substantially perpendicular to the bends connecting the first and second pair of legs.

59. (Previously presented) A method as claimed in claim 58 wherein said pulling force is applied to said further bend.

60. (Previously presented) A method as claimed in claim 57 wherein the wire element is secured to the bone while in tension by engaging a washer with the pair of second legs and securing the washer to the bone.